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ABSTRACT

The educational attainment of collegiate athletes recently has become a major concern. However, very little empirical research exists to substantiate any argument concerning the relationship between collegiate athletic participation and educational attainment. A study was undertaken at a major university to assess the extent of the athletes' educational progess at the institution. All athletes who participated in intercollegiate programs during a ten-year period were included in the sample (N=2088). The athletes' educational progress, measured by their grade point average and graduation rate, were compared to the general student population. The scores of athletes were found to be slightly lower than those of the general student population. Educational achievement was more likely among females than males, and among whites rather than blacks. Individual and nonrevenue-producing sports participants achieved higher educational attainment than did athletes from the major revenue-producing sports. The data refute the notion that athletic participation is detrimental to the educational process. Tables and charts contain information on the demographic and academic characteristics of the athlete and general school populations, and indicators of educational attainment by race, sex, level of athletic paricipation, and by sport. (Author/FG)

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EDUCATIONAL ATTAINMENT AND COLLEGIATE ATHLETES: INTRA-GROUP ANALYSIS AND COMPARISON TO THE GENERAL STUDENT POPULATION

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Paper presented at the American Alliance for Health, Physical Education, Recreation, and Dance National Convention, Boston, Massachusetts, April 15, 1981.

ABSTRACT

The educational attainment of collegiate athletes recently has become a major concern for administrators, faculty, athletes, students and others. However, very little empirical research exists to substantiate any argument concerning the relationship of collegiate athletic participation and educational attainment. This study was undertaken at a major (NCAA Division 1-A) western university to assess the extent of the athlete's educational progress at the institution. All athletes who participated in intercollegiate programs during a 10 year period, both males and females, were included in the sample (N = 2088). The athletes' educational progress, measured by their grade-point average and graduation rate, were compared to the general student population. Athletes were found to be only slightly different than the general student population with regard to grade-point average, graduation rate, entrance scores and high school grade-point average. Results indicated that significant differences existed between certain groups within the athlete population. Educational achievement was more likely to be found for females than for males, and in whites rather than among blacks. Individual and nonrevenue producing sport participants achieved higher educational attainment than did athletes from the major revenue producing sports. The data refute the notion that athletic participation is detrimental to the educational attainment

process. However, particular subgroups of athletes may be placed at a disadvantage with respect to achieving the goal of a college degree, either through their previous socialization or the time demands made by particular sports.

EDUCATIONAL ATTAINMENT AND COLLEGIATE ATHLETES:
INTRA-GROUP ANALYSIS AND COMPARISON TO THE
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In present American society it is undeniable that many institutions of higher education are better known for their "athletic accomplishment than for their scholarship" (Atwell, 1979: 367). Hanford has eloquently stated that "implicit in all the controversies that have surrounded intercollegiate athletics is the basic issue of their relationship to the educational process (1979: 363).

The recent revelations of academic compromises with respect to intercollegiate athletics of several institutions of higher education have shaken the foundation of collegiate sport (Progressive, 1979; Axthelm, et al. 1980; Sanoff, 1980; Underwood, 1980). The problems cover a broad range of unethical practices: the falsification of transcripts, the receiving of credit for courses not taken, and the financial and academic exploitation of the student-athletes. This type of unethical conduct will continue to embarass educational institutions until they realize the magnitude of the problem and take active measures to correct the situation (Nyquist, 1979).

The literature on the effects of sports participation on academic performance has been thoroughly analyzed for the high school athlete and does not need delineation here.[1] This research literature supports only a slight positive relationship

between sport and education (Snyder and Spreitzer, 1978). However, a paucity of research, aside from institutional studies, exists concerning the relationship between collegiate sport participation and educational attainment and most of these studies deal only with a single dimension of educational attainment (Litchfield and Cope, 1962; Stecklein and Dameron, 1965; Sage, 1967; Webb, 1968; Pilapil, Stecklein and Liu, 1970; Hanford, 1974; Hanks and Eckland, 1976; Harrison, 1976; Roper and Snow, 1976; Harris, 1980; Morgan, 1980). The research literature is substantially lacking in empirical studies which assess the general academic preparation and achievement level of collegiate student-athletes. This is rather perplexing in view of Spady's (1970) research which indicated that participation in high school sport may lead to increased educational aspirations but does not necessarily enhance or develop those academic characteristics necessary for success in college.

The relationship between a successful sports program and academic achievement is spurious since some of America's most respected and esteemed universities do not participate (Sage, 1976). Roper and Snow (1976) have substantiated the lack of a solid relationship between sport and athletics in their study of "big-time" athletic programs and programs of academic excellence did not correlate well with institutions involved in "big-time" athletic programs. This mythical positive correlation is one basis for the large expenditures on collegiate sport.

The most often used measure for the positive contribution of sport to achievement of college athletes is the linkage to occupational success (Litchfield and Cope, 1962; Loy, 1969; Hanks and Eckland, 1976; Dubois, 1978; Sack and Thiel, 1979). Several institutional reports (Notre Dame, Pittsburgh, Stanford) have claimed rather remarkable results of 80 percent or greater graduation rates (c.f. Michener, 1976: 237). A few studies have concentrated on the degree to which institutional racism impedes academic programs (Spivey and Jones, 1975; Oates, 1979) while others (Nebraska, Oklahoma, Southeast Conference, Southwest Conference) paint a rather bleak picture of the graduation rates for athletes (c.f. Benagh, 1976: 127; Oates, 1979).

The argument that sport interferes with the athlete's intellectual development has been well documented by former college athletes (Meggysey, 1970; Scott, 1971; Shaw, 1972; Edwards, 1973). Also, recent popular literature has revealed the many ways in which athletes circumvent traditionally accepted educational advancement (Oates, 1979; Axthelm et al. 1980; Moran, 1980; Sanoff, 1980; Underwood, 1980), leading some to conclude that these processes have led to a corruption within the institution of education (Eitzen and Sage, 1978).

Much of the current focus on intercollegiate sport concerns the financial expenditures to maintain the existing structure of collegiate athletics (Atwell, 1979; Davis, 1979; Grant, 1979; Lopino, 1979; Nyquist, 1979). The nature of the collegiate education-sport relationship is not fully understood. If, and

the possibility is genuine, educational ethics are being violated by some members of the athletic and/or academic community, they can only be exacerbated by the current financial crisis that has beset the sport programs at the collegiate level. Hanford has stated that society has created "an educational dilemma concerning the place and mission of athletics within our intellectual estates by mixing 'dollar values with educational ones'" (1978: 232).

Instances relating to the alleged fallacy of the student-athlete label have been well publicized in journalistic reports (Axthelm et al. 1980; Underwood, 1980) and biographical literature of many ex-athletes (Meggysey, 1970; Scott, 1971; Shaw, 1972). The coaches at these institutions proclaim that athletes are students first and athletes second. However, this does not seem to be the case, especially in those sports considered to be "revenue producing."[2] Anecdotal evidence suggests that while they publicly espouse and even truly hope that the athlete obtains a good education, the primary interest of many coaches is to keep the player eligible with the educational process being secondary. The best indicators of this are that when the athlete's eligibility ceases so does financial aid and the assistance with sometimes rather dubious class schedules by "brain coaches" and tutors. This often occurs without regard for progress toward degree attainment of the student (Stecklein and Dameron, 1965; Pilapil, Stecklein and Liu, 1970; Meggysey, 1970; Shaw, 1972; Spivey and Jones, 1975; Coakley, 1978).

The number of specific studies concerning collegiate athletes and their educational attainment has been relatively meager, generally limited to a single variable or sport. One such variable, and possibly the most important, is the graduation rate. Several studies support the hypothesis that athletes stand a better chance of graduating than nonathletes. Such was the Jesick (c.f. Michener, 1976) study of the 1963 University of Pittsburgh football team which indicated that 93 percent of them had graduated and 46 percent had received graduate degrees. A study of Litchfield and Cope (1962), focusing only on advanced degrees for University of Pittsburgh athletes, revealed that 37 percent had received degrees beyond the Bachelor's level. Pilapil, Stecklein and Liu (1970) at the University of Minnesota demonstrated that 50 percent of the athletes from the class of 1967 had graduated as compared to 41 percent of nonathletes. In addition, Michener (1976) has stated that institutional studies at Stanford and Notre Dame demonstrated graduation rates for athletes, 88 percent and 99 percent respectfully, as being considerably above that of the institutions' general student body.

While the aforementioned studies illustrated a better than average graduation rate among collegiate athletes, there is contradictory evidence which refutes this finding. The Webb (1968) study of all Michigan State University athletes over a five year period revealed that 49 percent of team and 60 percent of individual sport athletes had graduated. Since athletes from the graduating classes of 1958-63 were used, and the measurements

taken in 1968, five additional years should have encompassed the maximum number of graduation. Harrison (1976) has indicated that less than 20 percent of all incoming football players from 1966-71 at North Texas State University received degrees from the university. Over 56 percent of those who entered the university during this time dropped out of school during or at the end of the first year. A recent study by the University of New Mexico (1980) revealed that only 21 percent of football players had graduated from those eligible since 1970. Other seemingly low graduation rates cited by the study were track (24%), wrestling (24%), and basketball (28%). Nearly ten percent of the football and basketball players who entered the university were suspended for academic reasons. Studies conducted by the Southwest and Southeast Conferences have shown similar results (c.f. Benagh, 1976: 127).

The second major indicator or focus for determining the progress and/or ability of student-athlete is the grade-point average (GPA). As was the case with graduation rates, the results concerning GPA are also mixed. A study by Stecklein and Dameron (1965) at the University of Minnesota revealed that there was no significant difference between the GPA's of athletes and nonathletes. Later, a study at the same institution confirmed the previous finding by demonstrating that athletes had slightly better GPA's than nonathletes, 2.42 compared to 2.40 (Pilapil, Stecklein and Liu, 1970). However, Harrison (1976) revealed that football players at North Texas State University had attained

a mean GPA of only 2.00. One would imagine this to be considerably below the mean GPA for the entire university.

In 1974, American Council of Education commissioned a study (Hanford, 1974) to delineate the type and extent of problems in intercollegiate athletics. While the report defined several areas as having a problematic nature, very little comprehensive information was gathered and no further research initiated. However, it was noted that:

> It is generally admitted that in the big-time, scholar-athletes on the average have lower school records, test scores and academic predictions than other students at the time of admission--in effect, that they do indeed get preferential treatment because of their athletic ability (Hanford, 1974: 131).

Several years later, as the problems continued to mount, the Commission on Collegiate Athletics was formed by the American Council of Education to "develop recommendations for coping with the ethical problems attributed to athletics" (1978: 52). What has been accomplished by this commission? According to Nyquist, "very little, considering the high resolves that accompanied its birth" (1979: 382).

Since the educational and ethical problems of intercollegiate athletics continue to expand and with very little definition and understanding of the term educational attainment, this project was undertaken. The authors intend to compare the academic records of athletes to nonathletes for a ten year period at one

university and to determine empirically the differences, if any, between athletes and nonathletes and within various classifications of athletes. Several indicators of educational attainment will be used.

METHODOLOGY

The problem of identifying all athletes at the Division 1-A university proved to be an enormous and time consuming task. Due to the lack of complete record-keeping and the discrepancies encountered within those records, it was decided to operationalize the term "athlete" as anyone whose name appeared on the league eligibility form. A rather large sample size was defined (N = 2091).

Data for the analysis included all athletes, male and female, who participated at the university from Fall 1970 through Spring 1980. The reason for this arbitrary starting date of the sample was that computerized educational data from the university's Admissions and Records Department were only available for this time period. Another factor in the selection of this time frame was that it included a sufficient time interval to determine and include the percentage of athletes who take more than the normal 4-5 year time period to complete their education. In 1975, the institution changed from the quarter to the semester system. This had no effect on the analysis performed.

Two basic documents were used to identify individuals who were classified as athletes, the conference eligibility reports

which were supplied by the Athletic Department to the league office and the grant-in-aid records. This procedure effectively eliminated all "walk-on" athletes who failed to remain with the team for any substantial period of time. In all cases, the athlete had to have completed one academic term at the university to be included in the sample.

The grant-in-aid information was obtained from the Athletic Department records and broken down into the percentage of financial aid extended to the athletes. The expected cost of an academic term was obtained from the University Bulletin for each year that the athlete was enrolled. This dollar amount was then divided into the amount of financial aid received by the athlete to obtain a percentage. The largest percentage of financial aid obtained by the athlete during their residence at the university was used in the analysis.

Athletic Department records were used to determine the number of years that an individual participated on an athletic team at the university. In cases where the individual participated in multiple sports, the largest number of years of participation in any one sport was used. In addition, Athletic Department records were used to identify those persons who received an athletic letter, who participated while classified as a senior, and who participated in particular sports during their careers at the university.

Educational records used in the analysis were obtained from official university records in the Department of Admissions and

Records. Variables used in the analysis consisted of cumulative university grade-point averages, ACT and SAT scores, high school grade-point average, high school class rank, and the number of years spent at the university to achieve graduation. In addition, the demographic variables of sex and race were used in the analysis.

A major problem in identifying athletes at the institution was a somewhat inadequate identification procedure used by the Department of Athletics. All university records are classified by social security number except for those in the Athletic Department where the individual's name is used. Further complicating the problem was the use of nicknames, middle names, and other types of identification, rather than legal names, in the Athletic Department's record keeping process. In addition, the identifying name for a particular individual often differed within various sectors of the Athletic Department's records.

RESULTS

This study focuses on two sets of results: (1) the comparison of athletes to the general student population (GSP) on several variables which measure educational achievement; and (2) an analysis of the same educational achievement measures within various categories (e.g., sport, letterwinner, participation as a senior). The analysis of data concerning both questions was critical in determining whether athletes were substantially different from the GSP at the university and if any

significant differences existed between various categories of athletes regarding the degree to which the educational goals of the institution had been attained.

Athletes and Nonathletes. The data found in Table 1 consists of a breakdown by several demographic characteristics and the mean scores on the various educational attainment measures used in the analysis for both athletes and the GSP. Athletes at the university were approximately 80 percent male and 88 percent caucasian. The "other" category listed under the Race classification consisted of individuals of Oriental ancestry (2%) and the remaining two percent from various other racial groups. Mean scores of the educational achievement measures used for admission to the university were as follows: (a) high school grade-point average (2.99); (b) high school class standing (percentile rank) (69); (c) Scholastic Aptitude Test score (SAT) (949); and (d) American College Test score (ACT) (20.8). The two measures used to determine the degree of actual academic success attained by the individual at the university were the college grade-point average and graduation. Athletes maintained a grade-point average of 2.56 with 34.2 percent achieving graduation. In the case of the athletes, as well as the GSP, no attempt was made to determine whether an individual had transferred to another institution of higher education and proceeded to graduate. The rationale for this was that equality between the comparison groups was needed and since the academic records of the GSP did not contain this information it was not integrated into the athlete population.[3]

TABLE 1 ABOUT HERE

The indicators of academic achievement for athletes compared to the GSP found athletes scored lower on all dimensions of academic success. While scores were not "excessively" lower for athletes, they were lowest for the collegiate GPA and graduation rate.[4] This lesser degree of academic achievement could be attributed to the individual's overemphasis on sport involvement at the expense of academic pursuits, the admission of lesser qualified "athlete-students" to bolster the major revenue-sports programs (see later discussion concerning Table 5), the sometimes "excessive" time demands placed upon athletes by well-meaning coaching staffs, or to any of several other possible explanations.

An analysis of educational attainment measures by sex illustrates the existing cleavages between male and female athletes (Table 2). Females scored significantly higher on nearly all measures of educational achievements than their male counterparts. The only exception to this trend was with regard to the ACT score where males scored one-tenth of a point above the females.

The comparison between athletes and the GSP revealed that male athletes scored considerably lower on all indicators of academic achievement than their male counterparts from the GSP. Similar, though somewhat smaller differences were discovered between female athletes and females from the GSP on most

indices of educational success. However, female athletes were found to have a slightly higher college GPA. Graduation rates factored out by sex were not available for the GSP negating any possible comparison.

TABLES 2 AND 3 ABOUT HERE

The results obtained in the analysis with respect to race illustrate the significantly lower mean scores of black athletes (Table 3). Black athletes were found to have significantly lower scores on the entire range of educational achievement measures utilized in this study. These results are similar to those found by Spivey and Jones (1975).

Comparison data by race was not available for the GSP. However, a study conducted by the university's administration followed the freshman class of 1975 and revealed graduation rates of 40.5 percent (N = 42) for Blacks and 48.6 percent (N = 3986) for Caucasians. Both of these graduation rates were considerably higher than those reported for athletes of either race.

Variations Among Athletes. Many of the discrepancies reported in the literature and popular press on various indices of academic success are due to different samples and methodologies used in computing the various means. Therefore, the educational achievement measures were analyzed with respect to the following criteria: (1) whether the athlete participated as a senior; (2) letterwinner; (3) number of years of athletic participation; (4) the extent of an individual's grant-in-aid; and (5) whether or not the individual graduated.

Several interesting characteristics concerning the athlete population should be reported. Of the athletes at this university during the past ten years, 38.9 percent of those whose entering class had graduated participated as a senior. Over half, 54.9 percent, participated for only one year and 39.4 percent received an athletic letter. Full athletic grants were given to 28.7 percent of the athletes, while 48.4 percent received no aid whatsoever.[5]

TABLE 4 ABOUT HERE

Table 4 presents the results of the mean scores for the educational achievement measures by various categories of importance to athletes. By presenting only a selected category, such as those athletes who participated as seniors, it is possible to distort the perception of the athletic graduation rate. This distortion occurs especially with regard to those athletes in the so-called "major" sports who are actively recruited and then do not complete their education.

Those athletes who participated as a senior seem to be no different with respect to the educational measures used for university admission than their counterparts who participated only as underclassmen. However, those who participated as seniors did tend to have a significantly higher college GPA and graduate at nearly double the rate of the underclass athletic participant. The number of years an individual participated, which is closely linked to participation as a senior,

produced similar results. Similar findings were revealed for those athletes who graduated. However, this may simply be a result of better prepared incoming students being able to endure and persevere within the collegiate environment for a longer period of time.

A final point with reference to Table 4 deals with the measures of educational achievement, both entrance scores and college academic achievement measures, for athletes on grants-in-aid. The lowest mean scores appeared in the category of 100 percent financial assistance. Since the amount of financial aid extended is not determined on need, then should one not perceive that the aid would be given based on probability of academic success? These figures suggest to a significant degree that the "full-ride" athlete shows the least promise of attaining the educational goals espoused by the university, those of quality academic work and eventual graduation.

TABLE 5 ABOUT HERE

Table 5 presents the educational achievement measures broken down by sport.[6] The most revealing elements of the data are the relatively lower mean scores for the educational achievement measures used for university admission obtained by those athletes in the sports of football, basketball and wrestling. However, those athletes who have participated in basketball and wrestling, while attaining GPAs similar to those of football players, graduate at a seemingly better

rate. The data also tend to bear out that athletes involved in individual sports secure better grades and are more likely to graduate than team sport participants.

To accurately assess any trends in the data, college GPA and graduation rate for athletes were plotted versus year of last term of enrollment. The data indicate that over the time span of the study the college GPA and the graduation rate show fairly steady increases. However, since comparable information was not available for the GSP it is not known whether similar trends exist for the entire student population on these two indicators of academic success.

FIGURES 1 AND 2 ABOUT HERE

In analyzing the data, several additional relevant observations were noted. Athletes who were admitted to the university while seeminly lacking the necessary background failed to graduate. With respect to the graduation rate, only three percent of the athletes admitted with a high school GPA under 2.50 graduated. Similar results were observed regarding athletes who scored poorly on either the SAT or ACT entrance exams. Only 18 percent of those who scored under 700 on the SAT finally graduated. Athletes who were admitted to the university with ACT scores of less than 15 demonstrated a graduation rate of 24 percent. The obvious question concerning these athletes is the reason for their admission to the university--to fulfill the role of student-athlete or athlete-student.

Before indictment is made against all sports, let it be stated that this is primarily a problem of the "revenue" producing sports. This is illustrated by the fact that while the two major "revenue" sports accounted for only 29 percent of the athletes who had taken the SAT exam, they accounted for 47 percent of those athletes who had scores of under 700. Similar results were found for the ACT exam. Of the athletes admitted with a high school GPA of under 2.50, the sports of basketball and football accounted for 36 percent, while representing only 18 percent of the athletes for whom high school GPA records are available. A mediocre showing by the "revenue" sport athletes was also found with respect to college GPA. The athletes in these two sports accounted for 33 percent of the athletes in the sample, while simultaneously accounting for 50 percent of those athletes whose cumulative college GPA was less than 2.00 and 44 percent of those under 2.50.

DISCUSSION

The results of this study have demonstrated that the collegiate athlete was somewhat lower than the "average" college student with respect to the measures most commonly used to assess educational achievement. These results are similar to those of Stecklein and Dameron (1965) and Pilapil, Stecklein and Lin (1970) but contradict Webb's (1968) results for Michigan State athletes. We believe this to be a rather slight positive finding. However, this is not meant to extend a

"blanket pardon" to the existing structure of collegiate sport. As was revealed in our analysis, there are significant differences in the academic criteria by which a particular sex or ethnic group is evaluated. Oates (1979) reported similar findings in a study of the Southwest Conference, while Coakley (1978) has also addressed this point.

The existence of lower GPAs and entrance scores among athletes of the major sports corresponds with the findings of Harrison (1976). This, however, may be the direct result of excessive time demands made on the student-athlete.

If, as our results demonstrate, athletes are similar, though slightly lower in educational achievement to the overall student population, then what is the critical instigator of the problems between collegiate sports and educational attainment? The primary problems exist in the "revenue" sports of the major schools--both the problems of financial strain and academic misconduct (White, 1980; Moran, 1980).

What positive action can be taken? One alternative is to follow the route recently taken by the University of Colorado and others and eliminate several sports (Paul, 1980). However, according to the findings of this study, the sports which are being eliminated are the ones which most closely approximate the philosophical goals regarding educational attainment. The NCAA is currently taking action to strengthen its policies concerning the student-athletes. More stringent guidelines are to be voted on in upcoming NCAA National conventions

(Middleton, 1980). Whatever alternative is taken higher education must pay closer attention to the problems of collegiate sports and formulate a policy which clearly delineates "just what the role of sports in the higher education enterprise ought to be" (Hanford, 1979: 364).

It may be that the relationship between athletic participation and academic performance in a collegiate context may be different that the relationship which exists at the interscholastic level (Nixon, 1976; Snyder and Spreitzer, 1978). However, this has not been proven. Loy, McPherson and Kenyon (1978) have suggested that studies at the college level be undertaken in an attempt to evaluate whether sport aids or hinders the attainment of the professed goals of the educational system. Since the existing evidence is rather sketchy, if we do assume the existence of a positive relationship between sport and education at the collegiate level, then an explanation of the process dynamics is urgently needed (Loy, McPherson and Kenyon, 1978).

The ideal study would be a rather comprehensive study, possibly jointly funded by the NCAA, American Council of Education, and the Department of Education, which would seek to compare several measures of educational attainment for both athletes and nonathletes at all levels of intercollegiate sport. As Snyder and Spreitzer have suggested, "Valid comparisons between collegiate athletes and nonathletes are difficult because of variations in institutional quality, degree

programs, type of sport and other potentially contaminating factors" (1978: 76). These "obstacles" could, hopefully, be overcome if the project was comprehensive and adequately designed and funded.

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White, Gordon S., Jr.
1980 "Graduates cite U.S.C. abuses." New York Times (October 16): B-11.

FOOTNOTES

1. For a thorough review of this literature see the appropriate chapters relating educationa and sport in the following: (1) D. Stanley Eitzen and George H. Sage, Sociology of American Sport, Dubuque, Iowa: William C. Brown, 1978; (2) Jay J. Coakley, Sport in Society: Issues and Controversies, St. Louis: C. V. Mosby, 1978; (3) John W. Loy, Barry D. McPherson, and Gerald Kenyon, Sport and Social Systems, Reading Massachusetts: Addison-Wesley, 1978; and (4) Eldon E. Snyder and Elmer Spreitzer, Social Aspects of Sport, Englewood Cliffs, New Jersey: Prentice-Hall, 1978.

2. "Revenue" is used in a rather hesitant manner since in many cases the "revenue" sports operate in the "red" and further exacerbate the financial condition of a university's intercollegiate sport program.

3. By "tracking" athletes who transfer to another institution one may bias the comparative analysis to the GSP, as this variable is not controlled for the university's general statistics.

4. Differences of means between athletes and the GSP were not calculated since these groups were not samples but entire populations.

5. The amount of an athlete's grant-in-aid was determined as follows:

$$\text{Percent GIA} = \frac{\text{Amount of aid received}}{\text{estimated expenses taken from the university catalogs.}}$$

This figure was calculated for each year the athlete received aid, using the current year's estimated expenses, and the highest percentage of aid obtained was used.

6. Since this is the preliminary report men and women have not been separated out in such sports as gymnastics and basketball.

TABLE 1

DEMOGRAPHIC AND ACADEMIC INFORMATION FOR BOTH ATHLETES AND THE GENERAL STUDENT POPULATION

	Athletes[a]	General Student Population[b] (GSP)
Sex		
Male	79.7% (N = 1666)	45.5% (11604)
Female[c]	20.3% (425)	54.5% (13915)
Race		
Caucasian	88.1% (1841)	94.3%
Black	7.9% (166)	1.0%
Other	4.0% (84)	4.4%
College of Last Declared Major		
Agriculture	5.3% (111)	7.2% (988)
Business	16.1% (337)	12.0% (1654)
Engineering	5.1% (107)	7.1% (981)
Natural Resources	7.2% (151)	10.7% (1468)
Home Economics	3.3% (70)	10.2% (1408)
Natural Sciences	11.6% (242)	13.5% (1863)
Professional Studies[d]	17.5% (365)	6.3% (862)
Arts, Humanities and Social Science	30.7% (642)	29.4% (4038)
Biological Sciences	3.2% (66)	6.8% (929)
High School GPA[e]	2.99 (743)	3.31 (6402)
High School Class Standing[f]	69 (1550)	71
SAT Combined Score[g]	949 (1389)	997 (19944)
ACT Composite Score	20.8 (451)	22.1 (25529)
College GPA	2.56 (2075)	2.74
Graduation Rate	34.2% (1457)	46.8% (4188)

[a]Entire population for 10 year period Fall 1970-1980.

[b]GSP statistic are from a study completed for the University Administration for the period Fall 1973-1979. Exceptions to this population are the High School Class Standing (Fall 1971-1979) and the Graduation Rate which is from a study following the Freshman class of 1975.

[c]Women do not appear as varsity athletes until 1975.

[d]Professional Studies was created in 1975. Before that it was part of the College of Arts, Humanities and Social Sciences.

[e]High School GPA was not recorded before 1975.

[f]Class Standing is a percentile ranking. Calculated as:

$$100 - \frac{\text{Class Rank}}{\text{Class Size}} \times 100$$

[g]SAT Combined Score computed by simply adding the scores of the Verbal and Math components.

TABLE 2

INDICATORS OF EDUCATIONAL ATTAINMENT BY SEX FOR ATHLETES AND THE GENERAL STUDENT POPULATION

	Athletes[a]		General Student Population[b] (GSP)	
	Male	Female	Male	Female
SAT Combined Score	940 (N = 1077)	977 (312)*	1024 (8948)	979 (10996)
ACT Composite Score	20.8 (290)	20.7 (161)	22.8 (11614)	21.3 (13915)
High School Class Standing	66 (1181)	79 (369)**	----	----
High School GPA	2.85 (455)	3.21 (288)**	3.23 (2987)	3.38 (3415)
College GPA	2.48 (1651)	2.88 (424)*	2.65	2.84
Graduation Rate	33% (1270)	41% (189)**	----	----

*$p \leq .01$
**$p \leq .001$

[a]Significant differences refer only to mean differences between male and female athletes.

[b]GSP averages were taken from a University Administration study covering Fall 1973-Fall 1979. College GPA was computed from yearly averages for the period Fall 1970-Spring 1980.

TABLE 3

INDICATORS OF EDUCATIONAL ATTAINMENT
BY RACE FOR ATHLETES

	ATHLETES	
	Black	Caucasian
SAT Combined Score	753 (N = 86)	965 (1247)*
ACT Composite Score	14.9 (22)	21.2 (405)*
High School Class Standing	62 (99)	70 (1390)*
High School GPA	2.48 (43)	3.04 (658)*
College GPA	2.11 (163)	2.61 (1830)*
Graduation Rate	21% (118)	35% (1290)*

*$p \leq .001$

TABLE 4

INDICATORS OF EDUCATIONAL ATTAINMENT BY VARIOUS CRITERIA OF ATHLETIC PARTICIPATION

	SAT Combined Scores	ACT Composite Scores	High School GPA	High School Class Standing	College GPA	Graduation Rate
Underclass Participation	949 (1072)	20.8 (397)	2.99 (661)	69 (1231)	2.51 (1521)	26.2% (991)
Senior Participation	948 (317)	21.0 (54)	3.02 (82)	70 (319)	2.69 (554)***	51.1% (468)***
Nonletter Winner	958 (891)	20.8 (339)	3.05 (553)	70 (1025)	2.54 (1253)	28.2% (816)
Letter Winner	932 (498)**	20.7 (112)	2.82 (190)***	67 (525)**	2.59 (822)	41.8% (643)***
Years of Participation						
1 Year	956 (769)	20.7 (283)	3.01 (463)	69 (897)	2.48 (1134)	25.5% (774)
2 Years	927 (231)	20.8 (93)	2.95 (134)	67 (274)	2.55 (401)	35.0% (274)
3 Years	915 (190)	20.6 (42)	2.92 (92)	68 (184)	2.67 (234)	41.9% (148)
4 Years Or More	981 (199)***	21.8 (33)	3.04 (54)	73 (195)*	2.78 (306)*	54.8% (263)***
Grant-In-Aid						
No Aid	979 (722)	21.5 (295)	3.10 (489)	73 (820)	2.69 (1005)	37.0% (622)
1 - 33%	949 (134)	20.3 (58)	2.92 (83)	70 (151)	2.72 (182)	44.6% (112)
34 - 66%	942 (119)	19.2 (31)	2.92 (54)	66 (133)	2.54 (205)	37.8% (156)
67 - 99%	943 (53)	19.3 (9)	2.76 (14)	64 (54)	2.54 (88)	39.5% (76)
100%	892 (361)***	18.3 (58)***	2.59 (103)***	62 (392)**	2.30 (595)*	26.4% (493)***
Nongraduate	920 (655)	19.7 (116)	2.84 (223)	63 (682)	2.32 (945)	
Graduate	988 (345)***	21.4 (73)*	3.25 (28)***	72 (350)***	2.86 (498)*	

*$p \leq .05$
**$p \leq .01$
***$p \leq .001$

TABLE 5

INDICATORS OF EDUCATIONAL ATTAINMENT BY SPORT

	SAT Combined Scores	ACT Composite Scores	High School GPA	High School Class Standing	College GPA	Graduation Rate
Baseball	962 (113)	21.3 (43)	2.90 (62)	68 (123)	2.52 (184)	41.4% (128)
Basketball	893 (100)	19.3 (40)	2.89 (50)	68 (117)	2.49 (165)	39.1% (115)
Field Hockey	992 (34)	20.4 (11)	3.10 (26)	72 (33)	2.81 (44)	47.6% (21)
Football	899 (310)	18.6 (41)	2.60 (81)	61 (336)	2.30 (518)	26.8% (441)
Golf	1008 (61)	22.0 (23)	3.08 (33)	74 (71)	2.67 (90)	52.2% (67)
Gymnastics	955 (97)	20.4 (45)	3.10 (51)	74 (105)	2.76 (123)	34.1% (88)
Softball	938 (36)	20.6 (20)	3.23 (32)	83 (42)	2.73 (48)	47.6% (21)
Swimming	998 (138)	22.0 (47)	3.04 (86)	69 (153)	2.70 (193)	32.0% (128)
Tennis	993 (63)	22.0 (20)	3.18 (38)	78 (66)	2.77 (89)	33.9% (59)
Track	966 (299)	21.5 (109)	3.08 (201)	71 (341)	2.67 (416)	34.5% (249)
Volleyball	1001 (30)	21.6 (12)	3.29 (28)	81 (35)	2.95 (40)	36.8% (19)
Wrestling	945 (106)	20.1 (40)	2.79 (53)	65 (126)	2.52 (162)	36.4% (121)

FIGURE 1

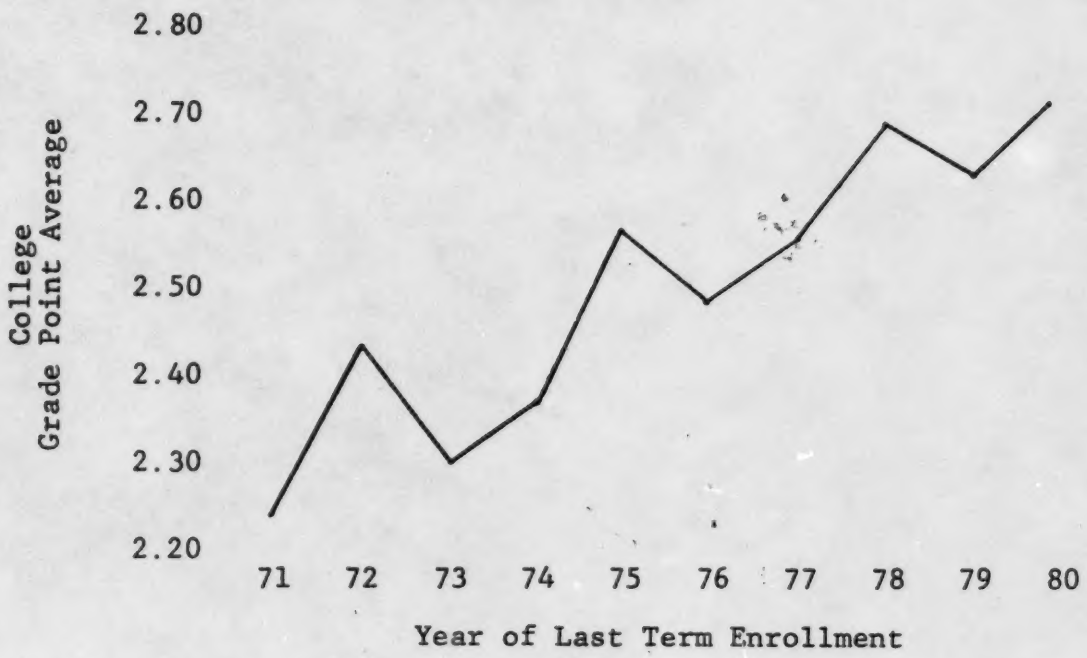
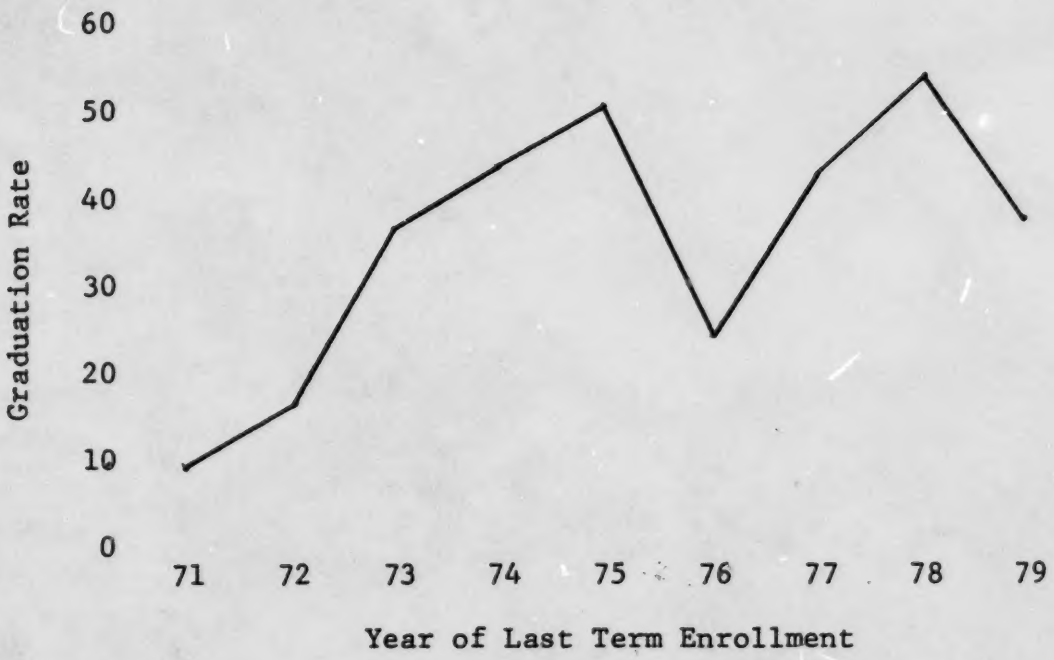

College
Grade Point Average
2.80
2.70
2.60
2.50
2.40
2.30
2.20
71
72
73
74
75
76
77
78
79
80
Year of Last Term Enrollment

FIGURE 2


60
50
40
30
20
10
0
Graduation Rate
71
72
73
74
75
76
77
78
79
Year of Last Term Enrollment